Appendix A: Manufacturing Processes, Occupations, and Exposure Circumstances Classified By IARC As Category 1, Carcinogenic To Humans

Certain manufacturing processes, occupations, and exposure circumstances have been considered by the International Agency for Research on Cancer (IARC) and have been classified by IARC as sources that are known to be carcinogenic to humans because of the associated increased incidences of cancer in workers in these settings. The National Toxicology Program has not reviewed the data supporting the listings of these occupational situations or exposure circumstances as posing a carcinogenic threat to humans, and recognizes that certain aspects of these exposures may differ in different parts of the world or may have changed over time. In addition, the manufacturing processes and occupations reviewed by IARC in its determinations may differ greatly from what has been or is currently used in the United States. In the interest of public health and for completeness, these occupational exposures and exposure circumstances are referenced here with the corresponding IARC citation given. The interested reader is referred to these documents for details.

- Aluminum Production (IARC vol. 34, 1984, IARC suppl. 7, 1987)
- Auramine Manufacture (IARC vol. 1, 1972, IARC suppl. 4, 1982, IARC suppl. 7, 1987)
- Coal Gasification (IARC vol. 34, 1984, IARC suppl. 7, 1987)
- Coal, Indoor Emissions from Household Combustion of (IARC vol. 95, 2010)
- Coal-Tar Distillation (IARC vol. 92, 2010)
- Coke Production (IARC vol. 92, 2010)
- Hematite Mining (Underground) (IARC vol. 1, 1972, IARC suppl. 4, 1982, IARC suppl. 7, 1987)
- Iron and Steel Founding (Occupational Exposure during) (IARC vol. 34, 1984, IARC suppl. 7, 1987)
- Isopropyl Alcohol Manufacturing Using Strong Acids (IARC vol. 15, 1977, IARC suppl. 4, 1982, IARC suppl. 7, 1987)
- Magenta Manufacture (IARC vol. 57, 1993)
- Painter (Occupational Exposure as a) (IARC vol. 47, 1989)
- Rubber Manufacturing Industry (IARC suppl. 4, 1982, IARC vol. 28, 1982, IARC suppl. 7, 1987)

The following occupational exposure circumstances were previously listed by IARC as Group 1, but they are no longer considered by IARC as separate "agents." IARC working groups for volume 100 (which reviewed all Group 1 carcinogens) concluded that the cancers observed in these industries were due to specific exposures, which are listed as Group 1 carcinogens:

- Boot and Shoe Manufacture and Repair (IARC vol. 25, 1981, IARC suppl. 4, 1982)
- Furniture Manufacture (IARC vol. 25, 1981, IARC suppl. 4, 1982, IARC suppl. 7, 1987)
- Nickel Refining (IARC vol. 2, 1973, IARC vol. 11, 1976, IARC suppl. 4, 1982).

Appendix B: Substances Delisted from the Report on Carcinogens

The agents, substances, mixtures, or exposure circumstances contained in this appendix were previously listed in the Report on Carcinogens as either *known* or *reasonably anticipated to be human carcinogens*. For substances removed from the Report on Carcinogens prior to the 1996 establishment of a formal review procedure for delisting substances from the Report on Carcinogens, the table below shows the reason for delisting. The reason for delisting is in some cases the fact that residents of the United States are not exposed to these substances because since they are no longer produced or used in the United States and in other cases that the rulings or findings as to the carcinogenic potential of the substances have been revised (e.g., as a result of new studies). The table indicates the last edition of the Report on Carcinogens in which these substances appeared, to which reference can be made for all information available.

For each substance removed from the Report on Carcinogens as a result of a formal review for delisting (from the Eighth Edition forward), a profile is provided following the table, which summarizes the review for delisting, including the relevant information and the issues identified by the scientific review groups that led to the substance's delisting. Background documents outlining in more detail the issues considered during the reviews for delisting these substances can be obtained by contacting the National Toxicology Program at the following address: National Toxicology Program, Report on Carcinogens Center, P.O. Box 12233, MD K2-14, Research Triangle Park, NC 27709.

Substance Name	CAS Number	Last Listing	Reason for Delisting
Chloramphenicol	56-75-7	*known* First RoC (1980)	Human data considered inadequate
Aramite	140-57-8	*reasonably anticipated* Fourth RoC (1985)	No U.S. residents exposed
N,N-Bis(2-chloroethyl)-2-naphthylamine (chlornaphazine)	494-03-1	*known* Fourth RoC (1985)	No U.S. residents exposed
Cycasin	14901-08-7	*reasonably anticipated* Fourth RoC (1985)	No U.S. residents exposed
Methyl iodide	78-88-4	*reasonably anticipated* Fourth RoC (1985)	Reevaluated by IARC; evidence now considered equivocal
5-Nitro-*o*-anisidine	99-59-2	*reasonably anticipated* Fifth RoC (1989)	Insufficient evidence of carcinogenicity
p-Nitrosodiphenylamine	156-10-5	*reasonably anticipated* Fifth RoC (1989)	Insufficient evidence of carcinogenicity
Ethyl acrylate	140-88-5	*reasonably anticipated* Eighth RoC (1998)	See following profile
Saccharin	81-07-2	*reasonably anticipated* Eighth RoC (1998)	See following profile

Report on Carcinogens Review Group Actions on the Nomination of Ethyl Acrylate for Delisting from the Report on Carcinogens

Summary of data contained in the Ethyl Acrylate Background Document (December 1998)

Ethyl Acrylate

CAS No. 140-88-5

Ethyl acrylate is used in various industries as an intermediate in the production of emulsion-based polymers which are then used in paint formulations, industrial coatings, and latex products. It is also used as a synthetic flavoring substance and fragrance adjuvant in consumer products. Human exposure to ethyl acrylate occurs mostly through inhalation of ethyl acrylate vapors, but it may also result from skin contact or ingestion as a food additive or from drinking of contaminated water. The Report on Carcinogens review groups considered the data underlying the nomination to remove ethyl acrylate from the Report on Carcinogens, where it has been listed as *reasonably anticipated to be a human carcinogen* since 1989. The basis for this listing was a gavage study that resulted in dose-related benign and malignant forestomach neoplasms in rats and mice. The Basic Acrylic Monomer Manufacturers, Inc. (BAMM), submitted a nomination to remove ethyl acrylate from the Report on Carcinogens based upon the following information: (1) negative tumorigenicity results from chronic-exposure studies using routes other than gavage in corn oil, (2) research results suggesting that the forestomach carcinogenicity observed in the gavage studies was secondary to a site-specific and concentration-dependent irritating effect of ethyl acrylate, and (3) the fact that significant human exposure to ethyl acrylate monomer is unlikely in light of current manufacturing practices and patterns of usage (see Human Exposure and Cancer Studies in Humans, below).

The majority opinion of the Report on Carcinogens review groups was to recommend that ethyl acrylate be removed from the Report on Carcinogens. This opinion was based on the facts that (1) the forestomach tumors induced in animal studies were seen only when ethyl acrylate was administered by gavage at high concentrations that induced marked local irritation and cellular proliferation, (2) animal studies using other routes of administration, including inhalation, gave negative results, and (3) significant chronic human oral exposure to high concentrations of ethyl acrylate monomer is unlikely. Therefore, ethyl acrylate does not meet the criteria to be listed in the Report on Carcinogens as *reasonably anticipated to be a human carcinogen.*

Summary of Available Carcinogenicity Data and Other Relevant Information

Cancer Studies in Experimental Animals

Although mutagenic in some *in vitro* tests, ethyl acrylate is not genotoxic under *in vivo* physiological conditions, perhaps because of its rapid metabolism to acrylic acid and ethanol by carboxyesterases and detoxification through binding to non-protein sulfhydryls. Target tissue toxicity in the form of irritation was observed in the skin in a lifetime mouse skin-painting study, in the nasal olfactory mucosa in 27-month inhalation studies in rats and mice, and in the forestomach in two-year corn-oil gavage studies in rats and mice. Only body-weight reduction was observed in a two-year study of exposure via drinking water in rats. The forestomach carcinogenicity observed in the corn-oil gavage studies was the only treatment-related tumorigenic response in the various animal studies. The irritation, hyperplasia, and tumor responses in the forestomach were related more to target-tissue concentration of ethyl acrylate than to delivered dose in the chronic gavage study. Based upon stop-exposure studies, gavage doses of ethyl acrylate in corn oil sufficient to induce sustained mucosal hyperplasia in the forestomach must be administered for longer than six months to induce forestomach neoplasia.

Human Exposure and Cancer Studies in Humans

Prolonged consumer exposure to high levels of ethyl acrylate monomer by the oral route is unlikely. Potentially significant exposures would most likely occur in an occupational setting where the routes of exposure would be dermal or by inhalation. Ethyl acrylate has a strong acrid odor (odor threshold ~ 0.5 ppb) and is a known irritant to the skin, eyes, and mucous membranes, making it unlikely that humans would be chronically exposed to high concentrations. Data provided in the BAMM nomination on worker exposure showed occupational exposure well below the threshold limit value (TLV = 5 ppm for an eight-hour time-weighted average) and the short-term exposure limit (STEL = 15 ppm), although exposure of painters in an unventilated room has been reported to be as high as 8 ppm in the painter's breathing zone.

An epidemiology study reported on mortality from cancer of the colon and rectum in three separate cohorts of workers from two plants manufacturing and polymerizing acrylate monomers. Workers were exposed to ethyl acrylate and methyl methacrylate monomer between 1933 and 1982. Risks for both types of cancer were associated with exposure in the earliest cohort, although the rectal cancer results are imprecise because of the small number of cases involved. The greatest relative risk was found in workers with the highest level of exposure and a 20-year latency. The other two cohorts, with later dates of hire, showed no excess risk, but very few cases were available for observation. This study, by itself, can neither establish nor rule out a causal relationship of ethyl acrylate with cancer.

Action on Nomination

Ethyl acrylate will be removed from the Report on Carcinogens because the relevant data are not sufficient to meet the current criteria to list this chemical as *reasonably anticipated to be a human carcinogen*. This is based on the fact that the forestomach tumors induced in animal studies were seen only when the chemical was administered by gavage at high concentrations of ethyl acrylate that induced marked local irritation and cellular proliferation, and because significant chronic human exposure to high concentrations of ethyl acrylate monomer is unlikely.

Report on Carcinogens Review Group Actions on the Nomination of Saccharin for Delisting from the Report on Carcinogens

Summary of data contained in the Saccharin Background Document (October 1997)

Saccharin

CAS No. 81-07-2

Saccharin and its sodium and potassium salts have been produced commercially in the United States for over 80 years. Saccharin is primarily used as a non-nutritive sweetening agent. Potential exposure to saccharin occurs through the consumption of dietetic foods and drinks and the use of some personal hygiene products. Potential exposure to saccharin also occurs in the workplace, specifically in occupations, industries, or facilities that produce and deal with saccharin

and its salts. The Report on Carcinogens review groups considered the data underlying the nomination to remove saccharin from the Report on Carcinogens where it has been listed as *reasonably anticipated to be a human carcinogen* since 1981. The basis for this listing was sufficient evidence of carcinogenicity in experimental animals. The Calorie Control Council submitted a nomination to the NTP to consider removing saccharin from the Report on Carcinogens based upon mechanistic data related to development of urinary-bladder cancers in rats (see Studies on Mechanisms of Carcinogenesis, below).

The majority opinion of the review groups was to recommend that saccharin be removed from the Report on Carcinogens. There is evidence for the carcinogenicity of saccharin in rats, but less convincing evidence in mice. Studies indicate that the observed urinary-bladder cancers in rats are related to the physiology of the rat urinary system, including urinary pH, osmolality, volume, the presence of precipitate, and urothelial damage with attendant hyperplasia following consumption of diets containing sodium saccharin at concentrations of 3% or higher, with inconsistent findings at lower dietary concentrations. The factors thought to contribute to tumor induction by sodium saccharin in rats would not be expected to occur in humans. The mouse data are inconsistent and require verification by additional studies. Results of several epidemiology studies indicate no clear association between saccharin consumption and urinary-bladder cancer. Although it is impossible to conclude with absolute certainty that it poses no threat to human health, sodium saccharin is not *reasonably anticipated to be a human carcinogen* under conditions of general usage as an artificial sweetener.

Summary of Available Carcinogenicity Data and Other Relevant Information

Cancer Studies in Experimental Animals

In four studies of up to 30 months' duration, sodium saccharin was carcinogenic in Charles River CD and Sprague-Dawley male rats, as evidenced by a dose-related increased incidence of benign or malignant urinary-bladder neoplasms at dietary concentrations greater than 1% (Tisdel *et al.* 1974, Arnold *et al.* 1980, Taylor *et al.* 1980, Schoenig *et al.* 1985). Non-statistically-significant increases in urinary-bladder cancer also were seen in saccharin-exposed female rats in studies showing a positive effect in males (Arnold *et al.* 1980, Taylor *et al.* 1980). Furthermore, several initiation/promotion studies in different rat strains showed a reduced latency and/or increased incidence of similar urinary-bladder cancers in male and female rats fed sodium saccharin after treatment with various urinary-bladder tumor initiators (e.g., Hicks and Chowaniec 1977, Cohen *et al.* 1979, Nakanishi *et al.* 1980a, West *et al.* 1986, Fukushima *et al.* 1990). Several additional rat studies in which sodium saccharin was administered either in the diet or in drinking water gave negative results for tumorigenicity (Fitzhugh *et al.* 1951, Lessel 1971, Schmähl 1973, Chowaniec and Hicks 1979, Hooson *et al.* 1980, Schmähl and Habs 1984).

Three mouse studies reported carcinogenicity following exposure to saccharin. Two of these studies involved surgical implantation of saccharin-containing cholesterol pellets into the urinary bladders and resulted in development of malignant urothelial neoplasms (Allen *et al.* 1957, Bryan *et al.* 1970). In the third study, dietary exposure to sodium saccharin resulted in increased incidences of malignant thyroid-gland neoplasms (Prasad and Rai 1986). Although the data from studies in mice cannot be discounted, some of these studies had methodological flaws, provided limited information, did not show a dose-response relationship, or had unexpected outcomes that may be species- or strain-specific, and should be verified by additional studies. The results of four studies in mice were judged negative for tumorigenesis (Roe *et al.* 1970, Kroes *et al.* 1977, Homberger 1978, Frederick *et al.* 1989), as were limited studies in nonhuman primates (McChesney *et al.* 1977, Sieber and Adamson 1978, Thorgiersson *et al.* 1994, Cohen *et al.* 1996) and a single hamster study (Althoff *et al.* 1975).

Cancer Studies in Humans

Most of the relevant human epidemiology studies examined associations between urinary-bladder cancer and artificial sweeteners, rather than saccharin *per se*. The time-trend data for urinary-bladder cancer showed no clear indication that the increased use of saccharin or artificial sweeteners commencing in the 1940s was associated with a general increase in urinary-bladder cancer when confounding factors, chiefly smoking, were controlled for. Risks of urinary-bladder cancer in diabetics, who presumably consume greater amounts of artificial sweeteners than the general population, were no greater than risks in the general population (Armstrong and Doll 1975). Based upon several case-control studies, there was no overall association between use of artificial sweeteners and urinary-bladder cancer (reviewed by IARC 1980, 1987b, JECFA 1993). However, an association between use of artificial sweeteners and urinary-bladder cancer could not be ruled out in some case-control subgroups, albeit involving small numbers (Howe *et al.* 1980, Hoover and Strasser 1980, Cartwright *et al.* 1981, Morrison *et al.* 1982, Mommsen *et al.* 1983). Taken together, the available epidemiology data show no consistent evidence that saccharin is associated with increased urinary-bladder cancer in general; however, a small increased risk in some subgroups, such as heavy users of artificial sweeteners, cannot be unequivocally excluded. With regard to the general population, if sodium saccharin is a risk factor, it is weak, and a causal relationship with cancer cannot be proven or disproven, because of a lack of exposure data and intrinsic limitations of the available epidemiology studies.

Studies on Mechanisms of Carcinogenesis

Extensive studies of the mutagenicity and genotoxicity of saccharin have shown generally negative but occasionally conflicting results. Sodium saccharin is essentially nonmutagenic in conventional bacterial systems, but is weakly clastogenic or genotoxic in short-term *in vitro* and in some *in vivo* test systems (reviewed by Ashby 1985, IARC 1987a,b, Whysner and Williams 1996). Urine from mice exposed to sodium saccharin was mutagenic in *Salmonella typhimurium* in one study (Batzinger *et al.* 1977). Saccharin does not covalently bind to DNA and does not induce unscheduled DNA synthesis in urinary-bladder urothelium.

Saccharin-induced carcinogenesis in rats showed a sex predilection for males (Tisdel *et al.* 1974, Arnold *et al.* 1980, Taylor *et al.* 1980), an organ specificity for urinary bladder (Tisdel *et al.* 1974, Arnold *et al.* 1980, Taylor *et al.* 1980, Fukushima *et al.* 1983, Schoenig *et al.* 1985), and a dose-response when exposure to dietary concentrations of 1% to 7.5% of the sodium salt of saccharin was begun early in life (beginning at birth or immediately at weaning) and continued for approximately two years (Schoenig *et al.* 1985). The results of mechanistic studies have shown that certain physiological conditions must be simultaneously or sequentially present for induction of urinary-bladder tumorigenesis. These conditions include a urinary pH greater than 6.5, increased urinary sodium concentration, increased urine volume, decreased urine osmolality, and presence of urinary crystals or precipitate, with resulting damage to the urothelium prompting a proliferative (hyperplastic) response of the urinary-bladder epithelium. All of these conditions have been studied extensively in male rats but less so in female rats or in mice. The high levels of urinary protein characteristically produced by male rats may partially explain

the sex predilection. The high intrinsic rate of urothelial proliferation at about the time of weaning is also believed to contribute to the observed tumorigenic effects. The urinary milieu in rats, especially male rats, is sufficiently different from that in humans or other species to support the contention that these observations are specific to rats. Pharmacokinetic and metabolism data on sodium saccharin do not explain the male rat's sensitivity for induction of urinary-bladder neoplasms (Sweatman and Renwick 1979, 1980).

Action On Nomination

Saccharin will be removed from the Report on Carcinogens, because the data on cancer in rodents are not sufficient to meet the current criteria to list this chemical as *reasonably anticipated to be a human carcinogen*. This decision is based on the perception that the observed urinary-bladder tumors in rats arise by mechanisms not relevant to humans, and the lack of data in humans suggesting a carcinogenic hazard.

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Appendix C: Substances Reviewed but Not Recommended for Listing in the Report on Carcinogens

Nominated agents, substances, mixtures, or exposure circumstances all are considered for possible listing in the Report on Carcinogens. For many of these, it is possible to determine that there are insufficient data available to warrant any formal consideration by the scientific review groups without carrying out an extensive evaluation. For others, relevant animal or human cancer studies do exist, but, after a formal consideration, the review groups reach the conclusion that the data do not warrant listing the agent, substance, mixture, or exposure circumstance in the Report on Carcinogens. The following table contains a record of nominations that were formally considered for listing by the NTP and, after evaluation by the Report on Carcinogens review groups, were recommended not to be listed in the Report on Carcinogens. Background documents outlining in more detail the issues considered during formal reviews of a nomination can be obtained by contacting the National Toxicology Program at the following address: National Toxicology Program, Report on Carcinogens Center, P.O. Box 12233, MD K2-14, Research Triangle Park, NC 27709.

Substance Name	CAS Number	Reviewed for Listing in	Reason for not Listing
Methyl *tert*-butyl ether (MTBE)	1634-04-4	Ninth RoC (1999)	Rodent cancer data not sufficient
Nickel alloys		Tenth RoC (2000)	Human data are inadequate and rodent cancer data not sufficient
Diethanolamine	111-42-2	Eleventh RoC (2004)	Rodent cancer data not sufficient

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Appendix E: Chemicals Nominated to the NTP for In-Depth Toxicological Evaluation

A searchable database of substances nominated to the NTP for toxicological testing is available on the NTP Web site at http://ntp.niehs.nih.gov/go/nom-search. The available information includes the substance nominated and the nomination date, source, rationale, and status. If NTP testing has been conducted, a link is provided to the results and status information. Nominations can be searched by substance name, Chemical Abstract Service Registry Number (CASRN) or keyword.

The Management Status Report (http://ntp.niehs.nih.gov/go/MSR-index) gives the status of substances selected for study using standard 2-week, 13-week, and/or 2-year toxicology and carcinogenicity protocols. Abstracts for all published NTP long-term carcinogenicity technical reports and short-term toxicity study reports are available electronically on the NTP Web site. To view the abstracts or download full reports, visit http://ntp.niehs.nih.gov.

For additional information about NTP studies, contact Central Data Management, Mail Drop K2-05, NIEHS, P.O. Box 12233, Research Triangle Park, NC 27709 (phone: 919-541-3419; e-mail: CDM@niehs.nih.gov).

Appendix F: Substance Names and Common Synonyms

A

2-AAF *see* 2-Acetylaminofluorene

ABP *see* 4-Aminobiphenyl

ADBAQ *see* 1-Amino-2,4-dibromoanthraquinone

AFB1 *see* Aflatoxins

2-acetamidofluorene *see* 2-Acetylaminofluorene

2-acetaminofluorene *see* 2-Acetylaminofluorene

acetate blue G *see* Disperse Blue 1

acetic aldehyde *see* Acetaldehyde

acetothioamide *see* Thioacetamide

acetylaldehyde *see* Acetaldehyde

acetylhydride *see* Acetaldehyde

acid red 114 (C.I.) *see* 3,3′-Dimethylbenzidine and Dyes Metabolized to 3,3′-Dimethylbenzidine, Dyes Metabolized to 3,3′-Dimethylbenzidine

acrylic acid amide *see* Acrylamide

actinolite *see* Asbestos

alcohol drinking *see* Alcoholic Beverage Consumption

aluminum-beryllium alloy *see* Beryllium and Beryllium Compounds

2-amino-9,10-anthracenedione *see* 2-Aminoanthraquinone

2-amino-3,4-dimethylimidazo[4,5-*f*]quinoline *see* Heterocyclic Amines (Selected)

2-amino-3,8-dimethylimidazo[4,5-*f*]quinoxaline *see* Heterocyclic Amines (Selected)

1-amino-2-methyl-9,10-anthracenedione *see* 1-Amino-2-methylanthraquinone

2-amino-3-methyl-3*H*-imidazo(4,5-*f*)quinoline *see* Heterocyclic Amines (Selected), 2-Amino-3-methylimidazo[4,5-*f*]quinoline (IQ)

2-amino-1-methyl-6-phenylimidazo[4,5-*b*]pyridine *see* Heterocyclic Amines (Selected)

2-amino-3-methylimidazo[4,5-*f*]quinoline *see* Heterocyclic Amines (Selected)

4-amino-1-β-D-ribofuranosyl-1,3,5-triazin-2(1*H*)-one *see* Azacitidine

3-amino-1,2,4-triazol *see* Amitrole

2-aminoanisole hydrochloride *see* *o*-Anisidine and Its Hydrochloride

2-aminoazotoluene *see* *o*-Aminoazotoluene

4-aminodiphenyl *see* 4-Aminobiphenyl

4-[(4-aminophenyl)(4-imino-2,5-cyclohexadien-1-ylidene)methyl]-benzenamine, monohydrochloride *see* Basic Red 9 Monohydride

aminotriazole *see* Amitrole

amosite *see* Asbestos

analgesic mixtures containing phenacetin *see* Phenacetin and Analgesic Mixtures Containing Phenacetin

2-anisidine hydrochloride *see* *o*-Anisidine and Its Hydrochloride

anthophyllite *see* Asbestos

Aroclor 1254 *see* Polychlorinated Biphenyls

Aroclor 1260 *see* Polychlorinated Biphenyls

5-AzaC *see* Azacitidine

5-azacytidine *see* Azacitidine

B

BBMP *see* 2,2-Bis(bromomethyl)-1,3-propanediol (Technical Grade)

BCME *see* Bis(chloromethyl) Ether and Technical-Grade Chloromethyl Methyl Ether

BCNU *see* Nitrosourea Chemotherapeutic Agents, Bis(chloroethyl) Nitrosourea

BHA *see* Butylated Hydroxyanisole

basic fuchsin *see* Basic Red 9 Monohydride

basic red 9 *see* Basic Red 9 Monohydride

basic red 9 monohydrochloride (C.I.) *see* Basic Red 9 Monohydride

beer *see* Alcoholic Beverage Consumption

benz[*a*]anthracene *see* Polycyclic Aromatic Hydrocarbons: 15 Listings

benz[*a*]anthracine *see* Polycyclic Aromatic Hydrocarbons: 15 Listings, Benz[*a*]anthracene

benz[*e*]acephenanthrylene *see* Polycyclic Aromatic Hydrocarbons: 15 Listings, Benzo[*b*]fluoranthene

1,2-benzanthracene *see* Polycyclic Aromatic Hydrocarbons: 15 Listings, Benz[*a*]anthracene

benzidine dye class *see* Benzidine and Dyes Metabolized to Benzidine, Dyes Metabolized to Benzidine

benzo[*a*]pyrene *see* Polycyclic Aromatic Hydrocarbons: 15 Listings

benzo[*b*]fluoranthene *see* Polycyclic Aromatic Hydrocarbons: 15 Listings

benzo[*j*]fluoranthene *see* Polycyclic Aromatic Hydrocarbons: 15 Listings

benzo[*k*]fluoranthene *see* Polycyclic Aromatic Hydrocarbons: 15 Listings

benzo[*rst*]pentaphene *see* Polycyclic Aromatic Hydrocarbons: 15 Listings, Dibenzo[*a*,*i*]pyrene

benzol *see* Benzene

beryl ore *see* Beryllium and Beryllium Compounds

beta-aminoanthraquinone *see* 2-Aminoanthraquinone

beta-naphthylamine *see* 2-Naphthylamine

bidis *see* Tobacco-Related Exposures, Tobacco Smoking

2,2′-bioxirane *see* Diepoxybutane

4-biphenylamine *see* 4-Aminobiphenyl

2,2-bis(bromomethyl)propane-1,3-diol *see* 2,2-Bis(bromomethyl)-1,3-propanediol (Technical Grade)

4-[bis(2-chloroethyl)amino]-L-phenylalanine *see* Melphalan

bis(2-chloroethyl)sulfide *see* Mustard Gas

4-[bis(2-chlomethyl)amino]benzenebutanoic acid *see* Chlorambucil

4,4′-bis(dimethylamino)benzophenone *see* Michler's Ketone

bis(2-ethylhexyl) ester 1,2-benzenedicarboxylic acid *see* Di(2-ethylhexyl) Phthalate

bis(2-ethylhexyl phthalate) *see* Di(2-ethylhexyl) Phthalate

3,3-bis(4-hydroxyphenyl)-1-(3*H*)-isobenzofuranone *see* Phenolphthalein

bischloroethyl nitrosourea *see* Nitrosourea Chemotherapeutic Agents, Bis(chloroethyl) Nitrosourea

broad-spectrum ultraviolet radiation *see* Ultraviolet Radiation Related Exposures

bromoethene *see* Vinyl Halides (Selected), Vinyl Bromide

busulfan *see* 1,4-Butanediol Dimethanesulfonate

1,3-butadiene diepoxide *see* Diepoxybutane

1,4-butanediol dimethanesulphonate *see* 1,4-Butanediol Dimethanesulfonate

butter yellow *see* *o*-Aminoazotoluene

C

C.I. acid red 114 *see* 3,3′-Dimethylbenzidine and Dyes Metabolized to 3,3′-Dimethylbenzidine, Dyes Metabolized to 3,3′-Dimethoxybenzidine

C.I. direct black 38 *see* Benzidine and Dyes Metabolized to Benzidine, Dyes Metabolized to Benzidine

C.I. disperse blue 1 *see* Disperse Blue 1

C.I. direct blue 6 *see* Benzidine and Dyes Metabolized to Benzidine, Dyes Metabolized to Benzidine

C.I. direct blue 15 *see* 3,3′-Dimethoxybenzidine and Dyes Metabolized to 3,3′-Dimethoxybenzidine, Dyes Metabolized to 3,3′-Dimethoxybenzidine

C.I. direct brown 95 *see* Benzidine and Dyes Metabolized to Benzidine, Dyes Metabolized to Benzidine

C.I. disperse orange *see* 1-Amino-2-methylanthraquinone

C.I. solvent yellow 3 *see* *o*-Aminoazotoluene

CCNU *see* Nitrosourea Chemotherapeutic Agents, 1-(2-Chloroethyl)-3-cyclohexyl-1-nitrosourea

CMME *see* Bis(chloromethyl) Ether and Technical-Grade Chloromethyl Methyl Ether

calcium arsenate *see* Arsenic and Inorganic Arsenic Compounds

calcium arsenite *see* Arsenic and Inorganic Arsenic Compounds

calcium chromate *see* Chromium Hexavalent Compounds

camphechlor *see* Toxaphene

carbamodithioic acid, diethyl-, 2-chloro-2-propenyl ester *see* Sulfallate

carmustine *see* Nitrosourea Chemotherapeutic Agents, Bis(chloroethyl) Nitrosourea

cemented carbides *see* Cobalt–Tungsten Carbide: Powders and Hard Metals

chewing tobacco *see* Tobacco-Related Exposures, Smokeless Tobacco

chinofer *see* Iron Dextran Complex

2-chlorallyl diethyldithiocarbamate *see* Sulfallate

chlordecone *see* Kepone

chlorethamine *see* Nitrogen Mustard Hydrochloride

chlorinated camphene *see* Toxaphene

4-chloro-1,2-benzenediamine *see* 4-Chloro-*o*-phenylenediamine

2-chloro-1,3-butadiene *see* Chloroprene

1-chloro-2,3-dibromopropane *see* 1,2-Dibromo-3-chloropropane

3-chloro-1,2-dibromopropane *see* 1,2-Dibromo-3-chloropropane

1-chloro-2-methyl-1-propene *see* Dimethylvinyl Chloride

3-chloro-2-methyl-1-propene *see* 3-Chloro-2-methylpropene

4-chloro-2-methylaniline *see* *p*-Chloro-*o*-toluidine and Its Hydrochloride

4-chloro-2-methylbenzenamine *see* *p*-Chloro-*o*-toluidine and Its Hydrochloride

4-chloro-2-methylbenzenamine hydrochloride *see* *p*-Chloro-*o*-toluidine and Its Hydrochloride

1-chloro-2-methylpropene *see* Dimethylvinyl Chloride

2-chloro-*N*-(2-chloroethyl)-*N*-methylethanamine *see* Nitrogen Mustard Hydrochloride

4-chloro-*o*-toluidine *see* *p*-Chloro-*o*-toluidine and Its Hydrochloride

4-chloro-*o*-toluidine hydrochloride *see* *p*-Chloro-*o*-toluidine and Its Hydrochloride

4-chloro-1,2-phenylenediamine *see* 4-Chloro-*o*-phenylenediamine

chlorocamphene *see* Toxaphene

chloroethene *see* Vinyl Halides (Selected), Vinyl Chloride

2-((((2-chloroethyl)nitrosoamino)carbonyl)amino)-2-deoxy-D-glucose *see* Nitrosourea Chemotherapeutic Agents, Chlorozotocin

chloromethyl methyl ether *see* Bis(chloromethyl) Ether and Technical-Grade Chloromethyl Methyl Ether

chloromethyl oxirane *see* Epichlorohydrin

chromated copper arsenate (CCA) *see* Arsenic and Inorganic Arsenic Compounds *and* Chromium Hexavalent Compounds

chromium VI *see* Chromium Hexavalent Compounds

chrysazin *see* Danthron

chrysotile *see* Asbestos

ciclosporin *see* Cyclosporin A

cigarettes *see* Tobacco-Related Exposures, Tobacco Smoking

cigars *see* Tobacco-Related Exposures, Tobacco Smoking

cis-dichlorodiamine platinum (II) *see* Cisplatin

cobaltous sulfate *see* Cobalt Sulfate

conjugated estrogens *see* Estrogens, Steroidal

copper-beryllium alloy *see* Beryllium and Beryllium Compounds

cristobalite *see* Silica, Crystalline (Respirable Size)

crocidolite *see* Asbestos

crystalline silica, respirable *see* Silica, Crystalline (Respirable Size)

(R-(R*,R*-(E)))-cyclic(L-alanyl-D-alanyl-*N*-methyl-L-leucyl-*N*-methyl-L-leucyl-*N*-methyl-L-valyl-3-hydroxy-*N*,4-dimethyl-L-2-amino-6-octenoyl-L-alpha-aminobutyryl-*N*-methylglycyl-*N*-methyl-L-leucyl-L-valyl-*N*-methyl-L-leucyl) *see* Cyclosporin A

cyclosporine *see* Cyclosporin A

D

DAAB *see* Diazoaminobenzene

DBP *see* 2,3-Dibromo-1-propanol

DDT *see* Dichlorodiphenyltrichloroethane

DEHP *see* Di(2-ethylhexyl) Phthalate

DEN *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosodiethylamine

DES *see* Diethylstilbestrol

DMN *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosodimethylamine

dantron *see* Danthron

decabromobiphenyl *see* Polybrominated Biphenyls

1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-1,3,4-metheno-2*H*-cyclobuta[*cd*]pentalen-2-one *see* Kepone

2-deoxy-2((methyl-nitrosoamino)carbonyl)amino)-D-glucopyranose *see* Nitrosourea Chemotherapeutic Agents, Streptozotocin

dextran iron complex *see* Iron Dextran Complex

4,4′-diaminodiphenyl ether *see* 4,4′-Oxydianiline

diaminodiphenyl ether *see* 4,4′-Oxydianiline

4,4′-diaminodiphenyl sulfide *see* 4,4′-Thiodianiline

4,4′-diaminodiphenylmethane *see* 4,4′-Methylenedianiline and Its Dihydrochloride

dibenz[*a,h*]acridine *see* Polycyclic Aromatic Hydrocarbons: 15 Listings

dibenz[*a,j*]acridine *see* Polycyclic Aromatic Hydrocarbons: 15 Listings

dibenz[*a,h*]anthracene *see* Polycyclic Aromatic Hydrocarbons: 15 Listings

dibenzo[*b,c,e,f*]chrysene *see* Polycyclic Aromatic Hydrocarbons: 15 Listings, Dibenzo[*a,h*]pyrene

dibenzo[*def,p*]chrysene *see* Polycyclic Aromatic Hydrocarbons: 15 Listings, Dibenzo[*a,l*]pyrene

dibenzo[*a,e*]pyrene *see* Polycyclic Aromatic Hydrocarbons: 15 Listings

dibenzo[*a,h*]pyrene *see* Polycyclic Aromatic Hydrocarbons: 15 Listings

dibenzo[*a,i*]pyrene *see* Polycyclic Aromatic Hydrocarbons: 15 Listings

dibenzo[*a,l*]pyrene *see* Polycyclic Aromatic Hydrocarbons: 15 Listings

7*H*-dibenzo[*c,g*]carbazole *see* Polycyclic Aromatic Hydrocarbons: 15 Listings

1,2,4,5-dibenzopyrene *see* Polycyclic Aromatic Hydrocarbons: 15 Listings, Dibenzo[*a,e*]pyrene

3,4,9,10-dibenzopyrene *see* Polycyclic Aromatic Hydrocarbons: 15 Listings, Dibenzo[*a,i*]pyrene

2,4-dibromo-1-anthraquinonylamine *see* 1-Amino-2,4-dibromoanthraquinone

2,3-dibromo-1-propanol phosphate (3:1) *see* Tris(2,3-dibromopropyl) Phosphate

dibromoneopentyl glycol *see* 2,2-Bis(bromomethyl)-1,3-propanediol (Technical Grade)

2,3-dibromopropan-1-ol *see* 2,3-Dibromo-1-propanol

2,3-dibromopropanol *see* 2,3-Dibromo-1-propanol

3,3′-dichloro-(1,1′-biphenyl)-4,4′-diamine *see* 3,3′-Dichlorobenzidine and Its Dihydrochloride

3,3′-dichloro-(1,1′-biphenyl)-4,4′-diamine dihydrochloride *see* 3,3′-Dichlorobenzidine and Its Dihydrochloride

2,4-dichloro-1-(4-nitrophenoxy)benzene *see* Nitrofen

1,3-dichloro-1-propene *see* 1,3-Dichloropropene (Technical Grade)

2,2-dichloro-*N*-(2-hydroxy-1-(hydroxymethyl)-2-(4-nitrophenyl)ethyl)-, (R-(R*,R*))-nitrophenyl)ethyl]acetamide *see* Chloramphenicol

[R-(R*,R*)]-2,2-dichloro-*N*-[2-hydroxy-1-(hydroxymethyl)-2-(4-nitrophenyl)ethyl]acetamide *see* Chloramphenicol

dichlorobromomethane *see* Bromodichloromethane

dichlorodimethyl ether, symmetrical *see* Bis(chloromethyl) Ether and Technical-Grade Chloromethyl Methyl Ether

2,4-dichlorophenyl-*p*-nitrophenyl ether *see* Nitrofen

diethyl ester sulfuric acid *see* Diethyl Sulfate

(E)-4,4′-(1,2-diethyl-1,2-ethenediyl)bisphenol *see* Diethylstilbestrol

diethyl sulphate *see* Diethyl Sulfate

diethylnitrosamine *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosodiethylamine

2,3-dihydro-6-propyl-2-thioxo-4(1*H*)-pyrimidinone *see* Propylthiouracil

1,8-dihydroxy-9,10-anthracenedione *see* Danthron

1,8-dihydroxyanthraquinone *see* Danthron

1,3-diisocyanatomethylbenzene *see* Toluene Diisocyanates

Dilantin *see* Phenytoin and Phenytoin Sodium

3,3′-dimethoxybenzidine dye class *see* 3,3′-Dimethoxybenzidine and Dyes Metabolized to 3,3′-Dimethoxybenzidine, Dyes Metabolized to 3,3′-Dimethoxybenzidine

dimethyl ester sulfuric acid *see* Dimethyl Sulfate

3,4-dimethyl-3*H*-imidazo[4,5-*f*]quinolin-2-amine *see* Heterocyclic Amines (Selected), 2-Amino-3,4-dimethylimidazo[4,5-*f*]quinoline (MeIQ)

3,8-dimethyl-3*H*-imidazo[4,5-*f*]quinoxalin-2-amine *see* Heterocyclic Amines (Selected), 2-Amino-3,8-dimethylimidazo[4,5-*f*] quinoxaline (MeIQx)

5-(3,3-dimethyl-1-triazenyl)1*H*-imidazole-4-carboxamide *see* Dacarbazine

4,4′-(dimethylamino)benzophenone *see* Michler's Ketone

3,3′-dimethylbenzidine dye class *see* 3,3′-Dimethylbenzidine and Dyes Metabolized to 3,3′-Dimethylbenzidine, Dyes Metabolized to 3,3′-Dimethylbenzidine

dimethylcarbamic chloride *see* Dimethylcarbamoyl Chloride

(1,1-dimethylethyl)-4-methoxyphenol *see* Butylated Hydroxyanisole

dimethylnitrosamine *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosodimethylamine

1,6-dinitropyrene *see* Nitroarenes (Selected)

1,8-dinitropyrene *see* Nitroarenes (Selected)

dioctyl phthalate *see* Di(2-ethylhexyl) Phthalate

dioxin *see* 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin

(Z)-2-[4-(1,2-diphenyl-1-butenyl)phenoxy]-*N,N*-dimethylethanamine *see* Tamoxifen

5,5-diphenyl-2,4-imidazolidinedione *see* Phenytoin and Phenytoin Sodium

diphenylan *see* Phenytoin and Phenytoin Sodium

diphenylhydantoin *see* Phenytoin and Phenytoin Sodium

5,5-diphenylhydantoin *see* Phenytoin and Phenytoin Sodium

1,2-diphenylhydrazine *see* Hydrazobenzene

1,3-diphenyltriazene *see* Diazoaminobenzene

direct black 38 (C.I.) *see* Benzidine and Dyes Metabolized to Benzidine, Dyes Metabolized to Benzidine

direct blue 6 (C.I.) *see* Benzidine and Dyes Metabolized to Benzidine, Dyes Metabolized to Benzidine

direct blue 15 (C.I.) *see* 3,3′-Dimethoxybenzidine and Dyes Metabolized to 3,3′-Dimethoxybenzidine, Dyes Metabolized to 3,3′-Dimethoxybenzidine

direct brown 95 (C.I.) *see* Benzidine and Dyes Metabolized to Benzidine, Dyes Metabolized to Benzidine

di-*sec*-octyl phthalate *see* Di(2-ethylhexyl) Phthalate

disodium hydrogen arsenate *see* Arsenic and Inorganic Arsenic Compounds

disperse orange *see* 1-Amino-2-methylanthraquinone

1,1a,2,2,3,3a,4,5,5,5a,5b,6-dodecachlorooctahydro-1,3,4-metheno-1*H*-cyclobuta(*cd*)pentalene *see* Mirex

Dowicide EC-7 *see* Pentachlorophenol and By-products of Its Synthesis

doxorubicin hydrochloride *see* Adriamycin

dyes metabolized to benzidine *see* Benzidine and Dyes Metabolized to Benzidine, Dyes Metabolized to Benzidine

dyes metabolized to 3,3′-dimethoxybenzidine *see* 3,3′-Dimethoxybenzidine and Dyes Metabolized to 3,3′-Dimethoxybenzidine

dyes metabolized to 3,3′-dimethylbenzidine *see* 3,3′-Dimethylbenzidine and Dyes Metabolized to 3,3′-Dimethylbenzidine

E

EDB *see* 1,2-Dibromoethane

ENU *see* *N*-Nitrosamines: 15 Listings, *N*-Nitroso-*N*-ethylurea

ETS *see* Tobacco-Related Exposures, Environmental Tobacco Smoke

ETU *see* Ethylene Thiourea

environmental tobacco smoke *see* Tobacco-Related Exposures

1,2-epoxyethylbenzene *see* Styrene-7,8-oxide

estradiol *see* Estrogens, Steroidal

estrone *see* Estrogens, Steroidal

ethanal *see* Acetaldehyde

ethanol *see* Alcoholic Beverage Consumption

ethinylestradiol *see* Estrogens, Steroidal

ethyl aldehyde *see* Acetaldehyde

ethyl carbamate *see* Urethane

ethyl methanesulphonate *see* Ethylmethanesulfonate

1-ethyl-1-nitrosourea *see* *N*-Nitrosamines: 15 Listings, *N*-Nitroso-*N*-ethylurea

ethylene dibromide *see* 1,2-Dibromoethane

ethylene dichloride *see* 1,2-Dichloroethane

ethylenethiourea *see* Ethylene Thiourea

eugenol methyl ether *see* Methyleugenol

F

FF-1 *see* Polybrominated Biphenyls

ferrochromium *see* Chromium Hexavalent Compounds

FireMaster FF1 *see* Polybrominated Biphenyls

Firemaster t 23 *see* Tris(2,3-dibromopropyl) Phosphate

flavatoxin *see* Aflatoxins

2-fluorenylacetamide *see* 2-Acetylaminofluorene

fluoroethene *see* Vinyl Halides (Selected), Vinyl Fluoride

formalin *see* Formaldehyde

G

gamma radiation *see* Ionizing Radiation, X-Radiation and Gamma Radiation

glycidaldehyde *see* Glycidol

H

HBV *see* Hepatitis B Virus

HCH *see* Lindane, Hexachlorocyclohexane (Technical Grade), and Other Hexachlorocyclohexane Isomers

HCV *see* Hepatitis C Virus

HPV *see* Human Papillomaviruses: Some Genital-Mucosal Types

hard metals *see* Cobalt–Tungsten Carbide: Powders and Hard Metals

hexabromobiphenyl *see* Polybrominated Biphenyls

1,4,5,6,7,7-hexa-chlorobicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid *see* Chlorendic Acid

hexachlorocyclohexane *see* Lindane, Hexachlorocyclohexane (Technical Grade), and Other Hexachlorocyclohexane Isomers

hexachlorocyclohexane isomers *see* Lindane, Hexachlorocyclohexane (Technical Grade), and Other Hexachlorocyclohexane Isomers

hexamethylphosphoric triamide *see* Hexamethylphosphoramide

hexavalent chromium compounds *see* Chromium Hexavalent Compounds

17-hydroxy-2-(hydroxymethylene)-17-methyl-5α,17β-androstan-3-one *see* Oxymetholone

(17α)-17-hydroxy-19-norpregn-4-en-20-yn-3-one *see* Norethisterone

14-hydroxydaunomycin *see* Adriamycin

I

IQ *see* Heterocyclic Amines (Selected), 2-Amino-3-methylimidazo[4,5-*f*]quinoline

2-imidazolidinethione *see* Ethylene Thiourea

indeno[1,2,3-*cd*]pyrene *see* Polycyclic Aromatic Hydrocarbons: 15 Listings

inorganic acid mists *see* Strong Inorganic Acid Mists Containing Sulfuric Acid

insulation glass fibers *see* Certain Glass Wool Fibers (Inhalable)

involuntary smoking *see* Tobacco-Related exposure, Environmental Tobacco Smoke

iron-carbohydrate complexes *see* Iron Dextran Complex

isopropylbenzene *see* Cumene

K

Kanechlor 500 *see* Polychlorinated Biphenyls

L

lead acetate *see* Lead and Lead Compounds

lead arsenate *see* Arsenic and Inorganic Arsenic Compounds

lead chromates *see* Chromium Hexavalent Compounds *and* Lead and Lead Compounds

lead phosphate *see* Lead and Lead Compounds

lomustine *see* Nitrosourea Chemotherapeutic Agents, 1-(2-Chloroethyl)-3-cyclohexyl-1-nitrosourea

L-phenylalanine, *N*-[(5-chloro-3,4-dihydro-8-hydroxy-3-methyl-1-oxo-1*H*-2-benzopyran-7-yl)-carbonyl]-, (R)- *see* Ochratoxin A

lubricant base oils *see* Mineral Oils: Untreated and Mildly Treated

M

MBOCA *see* 4,4′-Methylenebis(2-chloroaniline)

MeCCNU *see* Nitrosourea Chemotherapeutic Agents, 1-(2-Chloroethyl)-3-(4-methylcyclohexyl)-1-nitrosourea

MeIQ *see* Heterocyclic Amines (Selected), 2-Amino-3,4-dimethylimidazo[4,5-*f*]quinoline

MeIQx *see* Heterocyclic Amines (Selected), 2-Amino-3,8-dimethylimidazo-[4,5-*f*]quinoxaline

MMNG *see* *N*-Nitrosamines: 15 Listings, *N*-Methyl-*N*′-nitro-*N*-nitrosoguanidine

MOCA *see* 4,4′-Methylenebis(2-chloroaniline)

MVNA *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosomethylvinylamine

man-made mineral fibers *see* Ceramic Fibers (Respirable Size) *and* Certain Glass Wool Fibers (Inhalable)

mechlorethamine hydrochloride *see* Nitrogen Mustard Hydrochloride

mestranol *see* Estrogens, Steroidal

metallic arsenic *see* Arsenic and Inorganic Arsenic Compounds

metallic nickel *see* Nickel Compounds and Metallic Nickel

methallyl chloride *see* 3-Chloro-2-methylpropene

4-methoxy-1,3-benzenediamine *see* 2,4-Diaminoanisole Sulfate

9-methoxy-7*H*-furo [3,2*g*] [1] benzopyran-7-one *see* Methoxsalen with Ultraviolet A Therapy

2-methoxy-5-methylbenzenamine *see* *p*-Cresidine

1-methoxy-2-nitrobenzene *see* *o*-Nitroanisole

4-methoxy-*m*-phenylenediamine sulfate *see* 2,4-Diaminoanisole Sulfate

2-methoxybenzenamine *see* *o*-Anisidine and Its Hydrochloride

8-methoxypsoralen *see* Methoxsalen with Ultraviolet A Therapy

4-methyl-1,3-benzenediamine *see* 2,4-Diaminotoluene

2-methyl-1,3-butadiene *see* Isoprene

methyl chloromethyl ether *see* Bis(chloromethyl) Ether and Technical-Grade Chloromethyl Methyl Ether

methyl ester methanesulfonic acid *see* Methyl Methanesulfonate

methyl eugenol *see* Methyleugenol

3-methyl-3*H*-imidazo[4,5-*f*]quinolin-2-amine *see* Heterocyclic Amines (Selected), 2-Amino-3-methylimidazo[4,5-*f*]quinoline (IQ)

2-methyl-4-[(2-methylphenyl)azo]-benzenamine *see* *o*-Aminoazotoluene

6-[(1-methyl-4-nitro-1*H*-imidazol-5-yl)thio]-1*H*-purine *see* Azathioprine

2-methyl-5-nitro-l*H*-imidazole-l-ethanol *see* Metronidazole

1-methyl-6-phenyl-1*H*-imidazo[4,5-*b*]pyridin-2-amine *see* Heterocyclic Amines (Selected), 2-Amino-1-methyl-6-phenylimidazo[4,5-*b*]pyridine (PhIP)

2-methylbenzenamine *see* *o*-Toluidine

methyl-CCNU *see* Nitrosourea Chemotherapeutic Agents, 1-(2-Chloroethyl)-3-(4-methylcyclohexyl)-1-nitrosourea

5-methylchrysene *see* Polycyclic Aromatic Hydrocarbons: 15 Listings

methylene chloride *see* Dichloromethane

4,4′-methylenebis(2-chlorobenzenamine) *see* 4,4′-Methylenebis(2-chloroaniline)

4,4′-methylenebisbenzenamine *see* 4,4′-Methylenedianiline and Its Dihydrochloride

4,4′-methylenebisbenzenamine dihydrochloride *see* 4,4′-Methylenedianiline and Its Dihydrochloride

methylenedianiline dihydrochloride *see* 4,4′-Methylenedianiline and Its Dihydrochloride

4,4′-methylenedianiline dihydrochloride *see* 4,4′-Methylenedianiline and Its Dihydrochloride

4-(methylnitrosamino)-1-(3-pyridiyl)-1-butanone *see* *N*-Nitrosamines: 15 Listings, 4-(*N*-Nitrosomethylamino)-1-(3-pyridyl)-1-butanone

methyloxirane *see* Propylene Oxide

Michler's base *see* 4,4′-Methylenebis(*N*,*N*-dimethyl)benzenamine

mildly treated mineral oils *see* Mineral Oils: Untreated and Mildly Treated

mists, strong inorganic acid *see* Strong Inorganic Acid Mists Containing Sulfuric Acid

Myleran *see* 1,4-Butanediol Dimethanesulfonate

N

***N*-butyl-*N*-nitroso-l-butamine** *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosodi-*n*-butylamine

***N*-(2-chloroethyl)-*N′*-cyclohexyl-*N*-nitrosourea** *see* Nitrosourea Chemotherapeutic Agents, 1-(2-Chloroethyl)-3-cyclohexyl-1-nitrosourea

***N*-(2-chloroethyl)-*N*-(1-methyl-2-phenoxybenzenemethanamine hydrochloride** *see* Phenoxybenzamine Hydrochloride

***N*-dibutylnitrosoamine** *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosodi-*n*-butylamine

***N*-(4-ethoxyphenyl)acetamide** *see* Phenacetin and Analgesic Mixtures Containing Phenacetin

***N*-ethyl-*N*-nitroso-ethanamine** *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosodiethylamine

***N*-ethyl-*N*-nitrosourea** *see* *N*-Nitrosamines: 15 Listings, *N*-Nitroso-*N*-ethylurea

***N*-methyl-*N*-nitroso-ethenylamine** *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosomethylvinylamine

***N*-methyl-*N*-nitroso-glycine** *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrososarcosine

***N*-methyl-*N*-nitroso-*N′*-nitroguanidine** *see* *N*-Nitrosamines: 15 Listings, *N*-Methyl-*N*′-nitro-*N*-nitrosoguanidine

***N*-methyl-*N*-nitrosomethanamine** *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosodimethylamine

***N*-methyl-*N*-nitrosourea** *see* *N*-Nitrosamines: 15 Listings, *N*-Nitroso-*N*-methylurea

***N*-(1-methylethyl)-4-[(2-methylhydrazino)methyl]-benzamide monohydrochloride** *see* Procarbazine and Its Hydrochloride

***N*-methylvinylnitrosamine** *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosomethylvinylamine

***N,N*-bis(carboxymethyl)glycine** *see* Nitrilotriacetic Acid

***N,N′*-bis(2-chloroethyl)-*N*-nitrosourea** *see* Nitrosourea Chemotherapeutic Agents, Bis(chloroethyl) Nitrosourea

***N,N*-bis(2-chloroethyl)tetrahydro-2*H*-1,3,2-oxaphosphorin-2-amine, 2-oxide monohydrate** *see* Cyclophosphamide

***N,N*-dibutylnitrosoamine** *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosodi-*n*-butylamine

***N,N*-diethyldithiocarbamic acid 2-choroallyl ester** *see* Sulfallate

***N,N*-dimethyl-4-(phenylazo)-benzenamine** *see* 4-Dimethylaminoazobenzene

***N*-Nitroso-*N*-methylglycine** *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrososarcosine

***N*-nitroso-*N*-propyl-1-propanamine** *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosodi-*n*-propylamine

***N*-nitrosodipropylamine** *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosodi-*n*-propylamine

***N*-nitrosoethylurea** *see* *N*-Nitrosamines: 15 Listings, *N*-Nitroso-*N*-ethylurea

***N*-nitrosomethylurea** *see* *N*-Nitrosamines: 15 Listings, *N*-Nitroso-*N*-methylurea

***N*-nitrosophenylhydroxylamine, ethanolamine salt** *see* Cupferron

NDEA *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosodiethylamine

NEU *see* *N*-Nitrosamines: 15 Listings, *N*-Nitroso-*N*-ethylurea

NMU *see* *N*-Nitrosamines: 15 Listings, *N*-Nitroso-*N*-methylurea

NNK *see* *N*-Nitrosamines: 15 Listings, 4-(*N*-Nitrosomethylamino)-1-(3-pyridyl)-1-butanone

NNN *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosonornicotine

naphtho(1,2,3,4-*def*)chrysene *see* Polycyclic Aromatic Hydrocarbons: 15 Listings, Dibenzo[*a*,*e*]pyrene

neutrons *see* Ionizing Radiation

nickelocene *see* Nickel Compounds and Metallic Nickel

2-nitroanisole *see* *o*-Nitroanisole

nitrochlor *see* Nitrofen

6-nitrochrysene *see* Nitroarenes (Selected)

1-nitropyrene *see* Nitroarenes (Selected)

4-nitropyrene *see* Nitroarenes (Selected)

1-nitroso-piperidine *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosopiperidine

3-(1-nitroso-2-pyrrolidinyl)pyridine *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosonornicotine

nitrosodibutylamine *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosodi-*n*-butylamine

2,2′-(nitrosoimino)bis[ethanol] *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosodiethanolamine

4-nitrosomorpholine *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosomorpholine

1-nitrosopyrrolidine *see* *N*-Nitrosamines: 15 Listings, *N*-Nitrosopyrrolidine

***n*-propyl bromide** *see* 1-Bromopropane

O

***o*-aminoanisole** *see* *o*-Anisidine and Its Hydrochloride

***o*-dianisidine** *see* 3,3′-Dimethoxybenzidine and Dyes Metabolized to 3,3′-Dimethoxybenzidine, Dyes Metabolized to 3,3′-Dimethoxybenzidine

***o*-tolidine** *see* 3,3′-Dimethylbenzidine and Dyes Metabolized to 3,3′-Dimethylbenzidine, Dyes Metabolized to 3,3′-Dimethylbenzidine

octabromobiphenyl *see* Polybrominated Biphenyls

1,2-oxathiolane, 2,2-dioxide *see* 1,3-Propane Sultone

2-oxetanone *see* β-Propiolactone

oxirane *see* Ethylene Oxide

oxiranemethanol *see* Glycidol

3-oxiranyl-7-oxabicyclo[4.1.0]heptane *see* 4-Vinyl-1-cyclohexene Diepoxide

4,4′-oxybisbenzenamine *see* 4,4′-Oxydianiline

P

***p*-aminobiphenyl** *see* 4-Aminobiphenyl

***p*-aminodiphenyl** *see* 4-Aminobiphenyl

***p*-dichlorobenzene** *see* 1,4-Dichlorobenzene

***p*-dimethylaminoazobenzene** *see* 4-Dimethylaminoazobenzene

***p*-rosaniline hydrochloride** *see* Basic Red 9 Monohydride

***p,p′*-tetramethyldiaminodiphenylmethane** *see* 4,4′-Methylenebis(*N*,*N*-Dimethyl)benzenamine

PAHs *see* Polycyclic Aromatic Hydrocarbons: 15 Listings

PBBs *see* Polybrominated Biphenyls

PCBs *see* Polychlorinated Biphenyls

PCDD *see* 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin

PhIP *see* Heterocyclic Amines (Selected), 2-Amino-1-methyl-6-phenylimidazo-[4,5-*b*]pyridine

PUVA *see* Methoxsalen with Ultraviolet A Therapy

paraffins, chlorinated *see* Chlorinated Paraffins

paraformaldehyde *see* Formaldehyde

perchloroethylene *see* Tetrachloroethylene

petroleum *see* Mineral Oils: Untreated and Mildly Treated

3-phenylazo-2,6-diaminopyridine hydrochloride *see* Phenazopyridine Hydrochloride

3-(phenylazo)-2,6-pyridinediamine monohydrochloride *see* Phenazopyridine Hydrochloride

2,2′-[phenylenebis(oxymethylene)]bisoxirane *see* Diglycidyl Resorcinol Ether

phenyloxirane *see* Styrene-7,8-oxide

1,1′,1′′-phosphinothioylidynetrisaziridine *see* Thiotepa

pipe smoking *see* Tobacco-Related Exposures

piperazine estrone sulfate *see* Estrogens, Steroidal

platinum, diamminedichloro-, (SP-4-2)- *see* Cisplatin

polychlorinated camphenes *see* Toxaphene

polychlorocamphene see Toxaphene

polychlorophenols *see* 2,4,6-Trichlorophenol

potassium arsenate *see* Arsenic and Inorganic Arsenic Compounds

potassium arsenite *see* Arsenic and Inorganic Arsenic Compounds

potassium chromate *see* Chromium Hexavalent Compounds

potassium dichromate *see* Chromium Hexavalent Compounds

pregn-4-ene-3,20-dione *see* Progesterone

propane sultone *see* 1,3-Propane Sultone

2-propenamide *see* Acrylamide

2-propenenitrile *see* Acrylonitrile

5-(2-propenyl)-1,3-benzodioxole *see* Safrole

6-propyl-2-thiouracil *see* Propylthiouracil

propylenimine *see* 2-Methylaziridine

psoralen *see* Methoxsalen with Ultraviolet A Therapy

pyridium *see* Phenazopyridine Hydrochloride

Q

quartz *see* Silica, Crystalline (Respirable Size)

R

radiation, ionizing *see* Ionizing Radiation

radon *see* Ionizing Radiation

refractory ceramic fibers *see* Ceramic Fibers (Respirable Size)

resorcinol diglycidyl ether *see* Diglycidyl Resorcinol Ether

respirable crystalline silica *see* Silica, Crystalline (Respirable Size)

S

sawdust *see* Wood Dust

second hand smoke *see* Tobacco-Related Exposures, Environmental Tobacco Smoke

Selsun *see* Selenium Sulfide

semustine *see* Nitrosourea Chemotherapeutic Agents, 1-(2-Chloroethyl)-3-(4-methylcyclohexyl)-1-nitrosourea

sidestream smoke *see* Tobacco-Related Exposures, Environmental Tobacco Smoke

sintered carbides *see* Cobalt–Tungsten Carbide: Powders and Hard Metals

smokeless tobacco *see* Tobacco-Related Exposures

snuff *see* Tobacco-Related Exposures, Smokeless Tobacco

sodium arsenate *see* Arsenic and Inorganic Arsenic Compounds

sodium arsenite *see* Arsenic and Inorganic Arsenic Compounds

sodium chromate *see* Chromium Hexavalent Compounds

sodium dichromate *see* Chromium Hexavalent Compounds

sodium equilin sulfate *see* Estrogens, Steroidal

sodium estrone sulfate *see* Estrogens, Steroidal

solar radiation *see* Ultraviolet Radiation Related Exposures

solvent blue 18 *see* Disperse Blue 1

special-purpose glass fibers *see* Certain Glass Wool Fibers (Inhalable)

spirits *see* Alcoholic Beverage Consumption

steroidal estrogens *see* Estrogens, Steroidal

stilbestrol *see* Diethylstilbestrol

strontium chromate *see* Chromium Hexavalent Compounds

styrene oxide *see* Styrene-7,8-oxide

sulfur mustard *see* Mustard Gas

sulfuric acid *see* Strong Inorganic Acid Mists Containing Sulfuric Acid

sunbeds *see* Ultraviolet Radiation Related Exposures, Sunlamps or Sunbeds, Exposure to

sunlamps *see* Ultraviolet Radiation Related Exposures

synthetic mineral fibers *see* Ceramic Fibers (Respirable Size) *and* Certain Glass Wool Fibers (Inhalable)

synthetic vitreous fibers *see* Certain Glass Wool Fibers (Inhalable)

T

TCDD *see* 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin

TCE *see* Trichloroethylene

TEPA *see* Thiotepa

TFE *see* Tetrafluoroethylene

Telone II *see* 1,3-Dichloropropene (Technical Grade)

1,4,5,8-tetraamino-9,10-anthracenedione *see* Disperse Blue 1

1,4,5,8-tetraaminoanthraquinone *see* Disperse Blue 1
tetrachloroethene *see* Tetrachloroethylene
tetrachloromethane *see* Carbon Tetrachloride
tetraethyl lead *see* Lead and Lead Compounds
tetrafluoroethene *see* Tetrafluoroethylene
tetramethyl lead *see* Lead and Lead Compounds
1,1′-thiobis(2-chloroethane) *see* Mustard Gas
4,4′-thiobisbenzenamine *see* 4,4′-Thiodianiline
thiodianiline *see* 4,4′-Thiodianiline
thorium dioxide *see* Ionizing Radiation
Thorotrast *see* Ionizing Radiation, Thorium Dioxide
tobacco smoking *see* Tobacco-Related Exposures
2,4-toluene diisocyanate *see* Toluene Diisocyanates
2,6-toluene diisocyanate *see* Toluene Diisocyanates
toluenediamine *see* 2,4-Diaminotoluene
tremolite *see* Asbestos
1,1,1-trichloro-2,2-bis(*p*-chlorophenyl) ethane *see* Dichlorodiphenyltrichloroethane
trichloroethene *see* Trichloroethylene
trichloromethane *see* Chloroform
***a,a,a*-trichlorotoluene** *see* Benzotrichloride
tridymite *see* Silica, Crystalline (Respirable Size)
triethylenethiophosphoramide *see* Thiotepa
trimethylene methanesulfonate *see* 1,4-Butanediol Dimethanesulfonate
trioxane *see* Formaldehyde
tris(1-aziridinyl)phosphine sulfide *see* Thiotepa
tungsten carbides *see* Cobalt–Tungsten Carbide: Powders and Hard Metals

U

UMDH *see* 1,1-Dimethylhydrazine
UVA *see* Ultraviolet Radiation Related Exposures
UVB *see* Ultraviolet Radiation Related Exposures
UVC *see* Ultraviolet Radiation Related Exposures
UVR *see* Ultraviolet Radiation Related Exposures
untreated mineral oils *see* Mineral Oils: Untreated and Mildly Treated
urethan *see* Urethane

V

4-vinylcyclohexene diepoxide *see* 4-Vinyl-1-cyclohexene Diepoxide
vinylcyclohexene dioxide *see* 4-Vinyl-1-cyclohexene Diepoxide
vitreous fibers, synthetic *see* Certain Glass Wool Fibers (Inhalable)

W

wine *see* Alcoholic Beverage Consumption

X

xanthotoxin *see* Methoxsalen with Ultraviolet A Therapy
X-radiation *see* Ionizing Radiation
X-rays *see* Ionizing Radiation, X-Radiation and Gamma Radiation

Y

yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester, (3β,16β,17α,18β,20α)- *see* Reserpine

Z

zeolites *see* Erionite
zinc beryllium silicate *see* Beryllium and Beryllium Compounds
zinc chromates *see* Chromium Hexavalent Compounds

Appendix G: List of Substances by CAS Number

50-00-0 *see* Formaldehyde
50-18-0 *see* Cyclophosphamide
50-29-3 *see* Dichlorodiphenyltrichloroethane
50-32-8 (benzo[*a*]pyrene) *see* Polycyclic Aromatic Hydrocarbons: 15 Listings
50-55-5 *see* Reserpine
51-52-5 *see* Propylthiouracil
51-79-6 *see* Urethane
52-24-4 *see* Thiotepa
53-70-3 (dibenz[*a*,*h*]anthracene) *see* Polycyclic Aromatic Hydrocarbons: 15 Listings
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55-18-5 (*N*-Nitrosodiethylamine) *see* *N*-Nitrosamines: 15 Listings
55-86-7 *see* Nitrogen Mustard Hydrochloride
55-98-1 *see* 1,4-Butanediol Dimethansulfonate
56-23-5 *see* Carbon Tetrachloride
56-53-1 *see* Diethylstilbestrol
56-55-3 (benz[*a*]anthracene) *see* Polycyclic Aromatic Hydrocarbons: 15 Listings
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57-14-7 *see* 1,1-Dimethylhydrazine
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57-83-0 *see* Progesterone
58-89-9 (lindane) *see* Lindane, Hexachlorocyclohexane (Technical Grade), and Other Hexachlorocyclohexane Isomers
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62-55-5 *see* Thioacetamide
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62-75-9 (*N*-nitrosodimethylamine) *see* *N*-Nitrosamines: 15 Listings
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64-67-5 *see* Diethyl Sulfate
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75-52-5 *see* Nitromethane
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77-78-1 *see* Dimethyl Sulfate
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88-72-2 *see* *o*-Nitrotoluene
90-04-0 (*o*-anisidine) *see* *o*-Anisidine and Its Hydrochloride
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98-82-8 *see* Cumene
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100-75-4 (*N*-nitrosopiperidine) *see* *N*-Nitrosamines: 15 Listings
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106-94-5 *see* 1-Bromopropane
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107-13-1 *see* Acrylonitrile
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116-14-3 *see* Tetrafluoroethylene
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119-93-7 (3,3′-dimethylbenzidine) *see* 3,3′-Dimethylbenzidine and Dyes Metabolized to 3,3′-Dimethylbenzidine
120-71-8 *see* *p*-Cresidine
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134-29-2 (*o*-anisidine hydrochloride) *see* *o*-Anisidine and Its Hydrochloride
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192-65-4 (dibenzo[*a*,*e*]pyrene) *see* Polycyclic Aromatic Hydrocarbons: 15 Listings
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205-99-2 (benzo[*b*]fluoranthrene) *see* Polycyclic Aromatic Hydrocarbons: 15 Listings
207-08-9 (benzo[*k*]fluoranthrene) *see* Polycyclic Aromatic Hydrocarbons: 15 Listings
224-42-0 (dibenz[*a*,*j*]acridine) *see* Polycyclic Aromatic Hydrocarbons: 15 Listings
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563-47-3 *see* 3-Chloro-2-methylpropene
569-61-9 *see* Basic Red 9 Monohydride
584-84-9 (2,4-toluene diisocyanate) *see* Toluene Diisocyanates
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612-83-9 (3,3′-dichlorobenzidine dihydrochloride) *see* 3,3′-Dichlorobenzidine and Its Dihydrochloride
621-64-7 (*N*-nitrosodi-*n*-propylamine) *see* *N*-Nitrosamines: 15 Listings
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13256-22-9 (*N*-nitrososarcosine) *see* *N*-Nitrosamines: 15 Listings
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13654-09-6 (decabromobiphenyl) *see* Polybrominated Biphenyls
13909-09-6 (1-(2-chloroethyl)-3-(4-methylcyclohexyl)-1-nitrosourea) *see* Nitrosourea Chemotherapeutic Agents
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77500-04-0 (2-amino-3,8-dimethylimidazo[4,5-*f*]quinoxaline [MeIQx]) *see* Heterocyclic Amines (Selected)
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108171-26-2 *see* Chlorinated Paraffins (C_{12}, 60% Chlorine)

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